SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-40

Name: Herman Park Pond **County**: Lake
Legal Description: T106N- R53W- Sec.14
Location from nearest town: 2 miles west of Madison, SD.

Dates of present survey: June 19-20, 2007
Dates of last survey: June 13-15, 2005
Management classification: Warmwater Marginal

Primary Game and Forage Species	Secondary and Other Species
Northern Pike	Common Carp
Yellow Perch	Bigmouth Buffalo
Black Crappie	White Sucker
Black Bullhead	

PHYSICAL DATA

Surface Area: 5 acres **Watershed**: Unknown
Maximum depth: 9 feet **Mean depth**: 5.5 feet
Pond elevation observed during the survey: Full

Ownership of Lake and Adjacent Lakeshore Properties

Herman Park Pond is listed as meandered public water in the State of South Dakota Listing of Meandered Lakes. The South Dakota Department of Game, Fish, and Parks (GFP) owns and manages a State Park that contains the pond.

Fishing Access

Shoreline access is limited due to trees along the shore. There is a handicapped accessible fishing dock on the south side of the pond.

Field Observations of Water Quality and Aquatic Vegetation

The water in Herman Park Pond was slightly turbid with a Secchi depth measurement of 0.6 meter (2.0 feet). Some sago pondweed (*Potamageton pectinatus*), emergent bulrush (*Scirpus spp.*) and cattails (*Typha spp.*) were observed.

BIOLOGICAL DATA

Methods:

Herman Park Pond was sampled on June 19-20, 2007 with five overnight trap-net sets. The trap nets are constructed with 19-mm-bar-mesh (¾ in) netting, 0.9 m high x 1.5 m wide (3 ft high x 5 ft wide) frames and 18.3 m (60 ft) long leads. Sampling locations are displayed in Figure 5.

Results and Discussion:

Trap Net Catch

Black bullhead, black crappie and yellow perch were the most abundant species sampled with the trap nets. Bluegill, northern pike, green sunfish, and common carp were also sampled.

Northern pike stocking (Table 4) has produced a population substantially higher than the regional average, which is typically less than 1 (Table 1). Although the stocking has not generated the "fast" fishing observed on some of our other adult-stocked waters, anglers have harvested some fish (Table 2). The remaining northern pike are large (> 75 cm or 30 inches) and will continue to provide excitement for park pond anglers.

Table 1. Total catch from five overnight trap nets set at Herman Park Pond, Lake County, June 19-20, 2007.

Species	Number	Percent	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Black Bullhead	113	40.4	22.6	±6.3	3.6	10	0	85
Black Crappie	92	32.9	18.4	±7.8	6.8	56	44	110
Yellow Perch	36	12.9	7.2	±5.4	0.4	8	0	89
Bluegill	17	6.1	3.4	±2.4	3.0	0	0	114
Northern Pike	15	5.4	3.0	±1.3	10.4	93	40	82
Green Sunfish	6	2.1	1.2	±1.5	0.0	--	--	--
Common Carp	1	0.4	0.2	±0.3	8.4	--	--	--

*One year (2005)

Several year classes of black crappies were also sampled in the trap nets (Figure 1), although they were not stocked by GFP. Many yellow perch have been stocked (Table 4) but have not contributed significantly to the fishery.

Creel Survey Results

Summer fishing pressure has been relatively constant over the last four summers (Table 2). Nearly all fishing was done from shore and about 90% of angling parties interviewed in 2006-07 were South Dakota residents. Only four interviews were obtained in 2007, so catch/harvest rate and catch/harvest estimates are based on an extremely small sample size. Stocked northern pike have not provided a great fishery or controlled panfish abundance as evidenced by high angler catches of small panfish and bullheads. A couple of larger black crappies (over 25 cm or 10 inches) and yellow perch (18-23 cm; 7-9 inches) were harvested in 2006.

Table 2. Estimates of fishing pressure and catch (harvest) of fish on Herman Park Pond from May through August, 2004-2007.

Year	Pressure (h)	Northern Pike Catch (Harvest)	Yellow Perch Catch (Harvest)	Bluegill Catch (Harvest)	Bullheads Catch (Harvest)	Common Carp Catch(Harvest)
2007	1,206	0 (0)	2,235 (0)	223 (223)	503 (0)	0 (0)
2006	1,409	62 (47)	819 (297)	1,820 (0)	2,740 (234)	187 (47)
2005	998	68 (27)	0 (0)	27 (0)	52 (0)	276 (0)
2004	1,116	350 (165)	1,914 (85)	0 (0)	874 (280)	84 (0)

Table 3. Number of interviews and estimates of catch and harvest rates (number/hour) on Herman Park Pond from May through August, 2004-2007.

Year	Interviews	Northern Pike Catch (Harvest)	Yellow Perch Catch (Harvest)	Bluegill Catch (Harvest)	Bullheads Catch (Harvest)	Common Carp Catch(Harvest)
2007	4	0 (0)	1.85 (0)	0.19 (0.19)	0.42 (0)	0 (0)
2006	26	0.04 (0.03)	0.58 (0.21)	1.29 (0)	1.94 (0.17)	0.13 (0.03)
2005	16	0.07 (0.04)	0 (0)	0.03 (0)	0.05 (0)	0.27 (0)
2004	26	0.31 (0.15)	1.71 (0.08)	0 (0)	0.78 (0.25)	0.08 (0)

MANAGEMENT RECOMMENDATIONS

1. Stock adult gamefish as needed to create and maintain a fishery with high catch rates.

Table 4. Stocking record for Herman Park Pond, Lake County, 1999-2007.

Year	Number	Species	Size
1999	21,450	Fathead Minnow	Adult
2000	1,168	Yellow Perch	Adult
2002	325	Yellow Perch	Adult
2003	760	Yellow Perch	Adult
2004	407	Northern Pike	Adult
	500	Yellow Perch	Adult
2005	111	Northern Pike	Adult

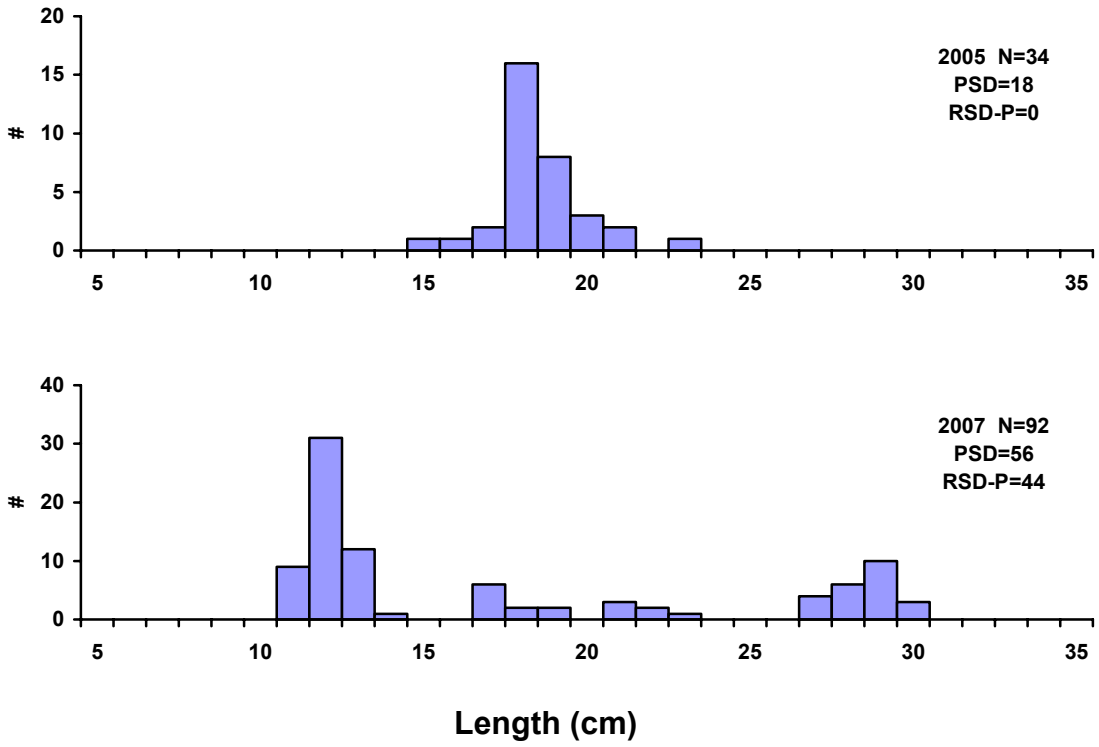

Figure 1. Length-frequency histograms for black crappies sampled with trap nets in Herman Park Pond, Lake County, 2007.

Appendix A. A brief explanation of catch per unit effort (CPUE), proportional stock density (PSD), relative stock density (RSD) and relative weight (Wr).

Catch Per Unit Effort (CPUE) is the catch of animals in numbers or in weight taken by a defined period of effort. Can refer to trap-net nights of effort, gill-net nights of effort, catch per hour of electrofishing, etc.

Proportional Stock Density (PSD) is calculated by the following formula:

$$PSD = \frac{\text{Number of fish} > \text{quality length}}{\text{Number of fish} \geq \text{stock length}} \times 100$$

Relative Stock Density (RSD-P) is calculated by the following formula:

$$RSD\text{-}P = \frac{\text{Number of fish} > \text{preferred length}}{\text{Number of fish} \geq \text{stock length}} \times 100$$

PSD and RSD-P are unitless and usually calculated to the nearest whole digit.

Size categories for selected species found in Region 3 lake surveys, in centimeters.

Species	Stock	Quality	Preferred	Memorable	Trophy
Walleye	25	38	51	63	76
Sauger	20	30	38	51	63
Yellow perch	13	20	25	30	38
Black crappie	13	20	25	30	38
White crappie	13	20	25	30	38
Bluegill	8	15	20	25	30
Largemouth bass	20	30	38	51	63
Smallmouth bass	18	28	35	43	51
Northern pike	35	53	71	86	112
Channel catfish	28	41	61	71	91
Black bullhead	15	23	30	38	46
Common carp	28	41	53	66	84
Bigmouth buffalo	28	41	53	66	84
Smallmouth buffalo	28	41	53	66	84

For most fish, 30-60 or 40-70 are typical objective ranges for “balanced” populations. Values less than the objective range indicate a population dominated by small fish while values greater than the objective range indicate a population comprised mainly of large fish.

Relative weight (Wr) is a condition index that quantifies fish condition (i.e., how much does a fish weigh for its length). A Wr range of 90-100 is a typical objective for most fish species. When mean Wr values are well below 100 for a size group, problems may exist in food and feeding relationships. When mean Wr values are well above 100 for a size group, fish may not be making the best use of available prey.